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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/813,815	03/31/2004	Ujjwal Manna	KUM-PT002	5043

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EXAMINER

MENON, KRISHNAN S

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 09/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/813,815

Applicant(s)

MANNA ET AL.

Examiner

Krishnan S. Menon

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 March 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-18 are pending as originally filed.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 4 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: the claims recite plurality of tubes held in the shell, and the fibers comprise multiple tubes. However, the structural cooperative relationship between the fibers and the plurality of tubes is not recited; this relationship seems to be essential to applicant's invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Suarez (US 5997731) in view of Clonts (US 3,992,156).

Saurez teaches a process and an apparatus for the process having packed metallic fibers mounted in a column (10), a first distributor for the fiber-wetting liquid (12), the second liquid flows co-currently with the first liquid as claimed. See the figures and column 4 line 54 – column 6 line 19.

The reference does not teach the details of the distributor, such as the second distributor for the second liquid. However, it teaches that mechanical details of the design of the mass transfer apparatus (including the distributor(s)) are known in the prior arts.

The reference is also silent on the plurality of modules of packed metallic fibers. However, this would also be a mechanical detail, which is taught by the prior arts. Clonts teaches details of the plurality of fiber bundles, with tie rods and fibers looped around the rods, and fibers bundle packed in to a tubular cap (12b)-see figures. It would be obvious to one of ordinary skill in the art at the time of invention to use the prior arts for obtaining the missing details of Suarez.

Regarding the distributor separating the column into first and second stages, these first and second stages represent only a structural separation. The teaching of the reference also teaches the same, since the alkaline phase wets the fibers first in distributor (12) before the hydrocarbons meet the fibers as schematically shown in figure 1. Similar structure is seen figure 1 of Clonts, wherein the fibers are first wetted by one phase before the other phase is loaded on to the fibers.

Fine metallic fibers, stainless steel, etc – see column 5 lines 28-35. Sinusoidal waves – see figure. Fiber dimensions can be optimized with respect to increased surface area vs. mechanical strength; the reference also teaches that such mechanical details are available in the prior arts.

Optional heating coil is not a patentable limitation.

The process taught is purifying hydrocarbon streams using alkaline solutions, impurities being sulfides, mercaptides, etc (column 9 lines 46-50).

Interview Summary

Applicant's invention is the distributor as depicted in figures 2 and 3. Since the reference teaches that mechanical details are known in the prior arts, providing specific details of applicant's invention in the claims would be required for patentability. In a telephonic interview on 9/6/06 with Mr. Weinstein, attorney of record, it was suggested to add the limitations as detailed in applicant's figures 2 and 3 in claims 1 and 15 for making the application in condition for allowance. However, Mr. Weinstein suggested providing some written suggestions for such an amendment. Therefore the following bulleted points are suggested as further limitations to be added (with modifications to the language as appropriate) to claims 1 and 15 for making them in condition for allowance.

- each of said modules having said metallic fibers mounted within a tube in said first stage, said tube having a bottom end and a top end, a cap on

Art Unit: 1723

said top end, the caps provided with orifices designed for specific flow rate,

- said first distributor comprising plurality of holes, each hole diameter greater than the holes on said caps,
- said second distributor having a plurality of larger holes each of diameter greater than the diameter of said tubes, and a plurality of smaller holes adjacent the larger holes,
- each of said tubes mounted between the said first and second distributors, cap end adjacent the first distributor and bottom end protruding through the second distributor

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S. Menon whose telephone number is 571-272-1143. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L. Walker can be reached on 571-272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1723

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Krishnan S Menon
Examiner
Art Unit 1723
9/12/06